Team commitment to service quality in self-managed service groups: an empirical assessment of the employee and customer perspective

Team Commitment to Service Quality in Self-managed Service Groups: An Empirical Assessment of the Employee and Customer Perspective

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Abstract

Recently, many companies have turned their service delivery into a self-managed team effort. This article examines the antecedents (i.e., employee perceptions) and consequences (i.e., customer perceptions) of team commitment to service quality in self-managed service groups. We begin by demonstrating that team commitment to service quality in self-managed service groups is critical to customer perceptions of service quality. Because of the hierarchically nested data-structure (i.e., groups and individuals), we investigate the antecedents of team commitment to service quality in service groups using a multi-level approach. Our results revealed significant effects of both individual- and group-level factors on our key variable, indicating the efficacy of multi-level techniques in modeling team-employee relationships.

Keywords: commitment; service teams; self-management; multi-level modeling

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Introduction

In the past decade excellence in service quality has frequently been identified as a key competitive advantage. In providing the flexibility and individualized care entailed in the service quality concept, companies must rely on their employees' commitment to providing customer service. Indeed, from recent research it has become clear that commitment of employees to customer service is of paramount importance to customer perceived service quality (Peccei and Rosenthal 1997; Wetzels 1998). Providing service quality encompasses a multiplicity of different tasks that require a broad range of knowledge, skills, and abilities (Helfert and Vith 1999). Therefore, the provision of service quality is increasingly viewed as the responsibility of teams. A growing number of organizations (e.g., McDonald's, Xerox, Twentieth Century Insurance) has introduced self-managed teams (Griffin, Baldwin, and Sumichrast 1994). Yeatts and Hyten (1998, p. 16) define a self-managed team as: "a group of employees who are responsible for managing and performing technical tasks that result in a product or service being delivered to an internal or external customer."

So far, research on commitment of employees in (service) organizations has focused on the individual employee. However, with the proliferation of self-managed service groups, there is a clear need for obtaining an in-depth insight into the antecedents and consequences of commitment to customer service at a more *aggregate* level (Griffin, Baldwin, and Sumichrast 1994; Peccei and Rosenthal 1997). With the advent of multi-level modeling, it has now become possible to differentiate between individual and team-related factors, providing an integral perspective on commitment to service quality (Kidwell

and Mossholder 1997). Such a perspective is taken in this paper. It is structured as follows. First, we empirically test whether team commitment to service quality is related to both customer-based and more objectively verifiable performance measures at the aggregate level. In addition, we develop and test a two-level model to determine what employee-level and aggregate-level antecedents affect team commitment to service quality of individual group members.

Team Commitment to Service Quality

It has been argued that commitment of employees to service quality is primarily a social action driven by affective, moral and altruistic motivations, rather than by overtly calculative considerations (Peccei and Rosenthal 1997). Frequently, commitment of service quality has been conceptualized in attitudinal or dispositional terms (e.g., Heskett 1987). However, as Pecei and Rosenthal (1997) have argued, in the context of teams, the construct should primarily include the behavioral manifestations of employees that are collectively taken on behalf of the customer. It involves purposive actions such as, service improvement initiatives, promoting service quality standards and exhibiting extra-role behavior aimed at customer perceived service quality and customer satisfaction. Furthermore, it has been argued that the use of a commitment measure that is focused on behavioral aspects may be more appropriate to predict behavior than relatively broad, attitudinal instruments (Ellemers, Gilder, and Van den Heuvel 1998). Following Pecei and Rosenthal (1997) we, therefore, define team commitment to service quality as: '*the relative propensity of a team to engage in continuous improvement actions and exert effort on the job for the benefit of customers*.' From this perspective, we examine how team commitment to service quality is related to customer perceptions and objectively measurable service levels. In addition, we explore the antecedents of team commitment to service quality.

The Impact of Team Commitment on Service Quality

Recent studies have emphasized the importance of commitment to service quality to customer evaluations (e.g., Peccei and Rosenthal 1997; Schneider, White, and Paul 1998). Loveman (1998) argued that capable employees who are enthusiastic about delivering great service enhance customer satisfaction. Furthermore, it has been empirically demonstrated that the extent to which employees are involved in seeking information from colleagues and customers in order to improve service quality is positively related to customer satisfaction (Johnson 1996). Finally, Schneider, White, and Paul (1998) have found that an organizational climate that encourages service employees to exert efforts and use their competencies on delivering high service quality, in turn, yields positive perceptions and experiences of customers. Therefore, we expect that a team climate that is conducive to providing service quality yields more favorable customer evaluations. Hence, we hypothesize that:

H_1: Self-managed service groups with a higher level of team commitment to service quality deliver higher customer perceived service quality than lower-level groups.

In the service research literature service quality and productivity are posited as two related but distinct aspects of service performance (Singh 2000). Service quality is concerned with *how* the service is delivered and often concerns subjective measures like supervisor and customer ratings. In contrast, productivity is assessed by quantifiable behavioral standards of service outcomes. Typical examples of service productivity measures are: 'response time', 'percentage of customer requests solved in one call' (Hyatt and Ruddy 1997). Ideally, service productivity and quality should be perfectly related. In practice, however, discrepancies between productivity and quality result from the underlying tension between efficiency and effectiveness (Singh 2000). Nevertheless, it has been argued that employees who

are committed to service quality will be able to handle these conflicting interests, as the rationale for many productivity standards is to improve service quality (Heskett, Sasser, and Schlesinger 1997). In line with this reasoning, we posit that quality-oriented service groups will not only obtain more positive customer evaluations, but also higher productivity:

H_2: Self-managed service groups with a higher level of team commitment to service quality deliver higher service productivity than lower-level groups.

Antecedents of Team Commitment to Service Quality

As team commitment to service quality is expected to be a key driver of service quality, it seems relevant to investigate its determinants. In line with previous work on work teams (e.g., Campion, Papper, and Medsker 1996), three types of antecedents can be discerned. First of all, meta-analytic studies of team effectiveness have identified organizational context as a major characteristic (Campion, Medsker, and Higgs 1993; Campion, Papper, and Medsker 1996). Hyatt and Ruddy (1997, p. 577) noted that: "too often researches of group effectiveness focus on the group itself and neglect the environment in which the group operates". A second group of antecedents pertains to the intra-group processes that take place among the individual employees of a team (Campion, Papper, and Medsker 1996). These reflect the interface between team and employee. Finally, previous research has identified intra-individual service employee behaviors, responses and attitudes (Hartline and Ferrell 1996).

Context-team interface

Several characteristics of the organizational context in which service groups operate are likely to influence team members' capacity to engage in continuous improvement of the service performance of

their team. We discern four context-team antecedents: empowerment, formalization, bureaucratic obstacles and interdepartmental communication.

Empowerment. Empowerment refers to a general organizational orientation in which employees have the discretion to make day-to-day decisions about job-related activities (Bowen and Lawler 1992; Hartline and Ferrell 1996). In a work group context, empowerment concerns the ability of the group members to make task-related decisions and the acceptance of the responsibility for the outcomes of these decisions (Campion, Medsker, and Higgs 1993). By allowing customer-contact employees to make these decisions, management relinquishes control over many aspects of the service delivery process. As a result, team members are stimulated to take initiative and use their judgement when dealing with customers (Hill 1991). Therefore, we hypothesize that:

H_3: There will be a positive impact of empowerment on team commitment to service quality in self-managed service groups.

Formalization. Formalization is the extent to which work activities imposed by upper management on the team are defined formally by administrative rules, policies and procedures (Ford and Slocum 1977). Especially in conditions of boundary spanning self-management, clarity in terms of rules, administrative procedures and organizational policies is of crucial interest (Rathnam, Mahajan, and Whinston 1995). Although, formalized rules and regulations may constrain a team's ability to respond effectively to customer requirements (Hartline and Ferrell 1996), a number of studies have conceptually supported and empirically demonstrated the positive impact of formalization on commitment-related variables (Michaels et al. 1988, 1996). The rationale being that by making the content of service quality goals and objectives more explicit, formalization enables team members to make more objective decisions about whether to "internalize" the service quality goals of the organization as their own (cf., Morris and Steers 1980).

Furthermore, service processes that are driven by operationally useful rules and procedures may enhance team members' perceptions of the service quality in the organization. Therefore, we hypothesize that:

H_4: There will be a positive impact of formalization on team commitment to service quality in self-managed service groups.

Bureaucratic obstacles. Despite the positive impact of clear rules and regulations, it has been argued that organizational change and innovation are frequently hindered by bureaucratic administrative structures and systems (Uhl-Bien and Graen 1998). These processes which involve centralized decision-making and managerial resistance to change have been identified as bureaucratic obstacles that are often at odds with self-management. These processes limit the scope for innovation and experimentation on the job, and leave little room for employees to be flexible and adaptive to customer expectations. Therefore, we hypothesize that:

H_5: There will be a negative impact of bureaucratic obstacles on team commitment to service quality in self-managed service groups.

Interdepartmental communication. Interdepartmental communication is a contextual characteristic because it is often the responsibility of the management. Supervising team boundaries and integrating the group with the rest of the organization enhances not only team effectiveness (Sundstrom, De Meusse, and Futrell 1990), but is also a necessary condition to team commitment to service quality. The relationship of the team with organizational practices and arrangements either enhances or constrains members' ability to respond effectively to customer requirements (Peccei and Rosenthal 1997). Therefore, we hypothesize:

H_6: There will be a positive impact of interdepartmental communication on team commitment to service quality in self-managed service groups.

Team-employee Interface

Team Norms. It has been reported that team norms have a considerable impact on team performance (Yeatts and Hyten 1998). Norms are defined as: "standards that are shared by group members which regulate group behavior" (Cohen 1994, p. 85). The central issue here is the role of consensus-building in establishing team norms. When there is agreement about norms, the dominant responses of individual team members are compatible with one another. Argote (1989, p.138), for instance, notes: "that agreeing about *how* to solve work problems may be more important than the particular problem-solving method selected". Shared visions and values bind employees together in collaborative pursuit. As individuals jointly work together by sharing information, they become convinced that everyone should contribute and that by cooperating they can all accomplish the task successfully (Kouzes and Posner 1987). Hence, we hypothesize that:

H_7: There will be a positive impact of team norms on team commitment to service quality in self-managed service groups.

Team Goal Setting. Self-management entails the process that groups develop their own goals. In contrast with team norms, goals are specific, measurable levels of performance (Yeatts and Hyten 1998). So far, most goal-setting research has focused on the specific nature and content of assigned goals (Locke et al. 1981). However, with the introduction of self-managed teams, rather than investigating the specific content or structure of goals, more emphasis has been put on the process of participation of individual team members in the establishment of their own group goals recently (Manz and Sims 1987; Uhl-bien and Graen 1998). Several researchers have concluded that the motivation to achieve team goals is highest when the team is allowed to establish its own goals based on management's

mission for the team (Hackman and Walton 1986; Neck, Steward, and Manz 1996). Team objectives jointly set by individual team members may be preferred because they engender more commitment than goals that are assigned as employees can tailor the goals to their own values and interests (Yeatts and Hyten 1998). In addition, individual employees can have personal goals that are coordinated with and necessary for accomplishing team goals (Neck, Steward, and Manz 1996). Therefore, it is hypothesized that:

H_8: There will be a positive impact of team goal setting on team commitment to service quality in self-managed service groups.

Employee-role interface

Role Stress. Service teams are boundary spanning units. As such, they have to balance the interests of the organization and the customer, a task that may be stressful (Rathnam, Mahajan, and Whinston 1995). Two dimensions of role stress have been discerned in the literature; role ambiguity and role conflict (Boles and Babin 1996). Role ambiguity occurs when team members lack the information necessary for performing their role and role conflict is the result of the incompatibility between the firm's and the customer's interest (Hartline and Ferrell 1996; Singh 1993). Role stress may increase team members' uncertainty about the best way to perform their jobs. Hence, we propose that:

H_9: There will be a negative impact of role ambiguity of individual employees on team commitment to service quality in self-managed service groups.

H_{10}: There will be a negative impact of role conflict of individual employees on team commitment to service quality in self-managed service groups.

Aforementioned hypotheses are summarized in the following conceptual model:

[PLEASE INSERT FIGURE 1 ABOUT HERE]

In the next section we empirically test this model. This is done in two stages. In analysis part one we test whether the level of team commitment to service quality leads to differences in customer perceived quality and service productivity. In analysis part two we test the impact of antecedents on team commitment to service quality.

An Empirical Study

Research Setting

Both service employees and business-to-business customers participated in our study. Members of self-managed after-sales service groups of a major manufacturer of office equipment in the Netherlands and their customers were surveyed. The firm employs approximately 17,500 people worldwide and has offices in 30 countries. It has a dominant presence in medium and high volume segments and strives to maintain long-standing relationships with its customers on the basis of service excellence. Most of the firm revenues result from service. The service business unit in the Netherlands employs 250 employees, the majority of which are divided in 26 self-managed teams with an average size of 8 service engineers. Self-management was introduced to provide higher after-sales service quality. More specifically, the key responsibilities of the groups include (1) corrective maintenance and (2) call screening (i.e., solve technical problems that cannot be solved by a simple phone call). As most customers are large firms with an extensive product range, team activities involve operational planning, developing objectives and monitoring performance. The implementation of self-management is considered to be an important organizational change process. Therefore, the practical rationale for conducting our study was to examine its impact on service performance and to evaluate the central role of commitment to service quality.

Questionnaire Development

All scale items of the employee survey were measured with a 7-point scale, ranging from 'strongly disagree' (1) to 'strongly agree' (7). The assessment of team commitment to service quality (7 items) was based on items specifically developed for this study on the basis of interviews with service engineers and based on the commitment to customer service scale of Peccei and Rosenthal (1997). The operationalization of empowerment (7 items) was largely based upon an instrument suggested by Hartline and Ferrell (1996). Formalization (2 items) was measured using items adapted from a scale developed by Ferrell and Skinner (1988). Bureaucratic obstacles (3 items) was assessed by items developed specifically for this study. The interdepartmental communication-scale (8 items) was partly based on a scale developed by Campion, Medsker, and Higgs (1993) and on items developed specifically for this study. The instrument for team norms (5 items) was based on the work of Hackman (1987). The assessment of team goal setting (4 items) was based on a scale developed by Locke and Latham (1984) and the self-goal setting instrument of Manz and Sims (1987). Role ambiguity (6 items) and role conflict (8 items) were measured using the 14-item instrument developed by Rizzo, House, and Lirtzman (1970). In addition to these constructs, the demographic variables age and organizational tenure served as control variables. With regards to the customer survey, all scale items were measured with 9-point scales ranging from 'very dissatisfied' to 'very satisfied'. The scale for customer perceived service quality (8 items) was based on the five-dimensional SERVQUAL-instrument developed by Parasuraman, Zeithaml, and Berry (1988). Service productivity was assessed using two criterion measures. The first criterion was 'response time', or the elapsed time in hours from the placement of a request for service to the arrival of a service technician. As a second criterion was used 'product performance', or the percentage of time the product is operational.

Sampling and Surveying

Due to the limited number of employees (and teams) we conducted a census, i.e. all employees were approached to participate in our study. A mail questionnaire was designed containing closed and open-ended questions. The questionnaires were returned to the researcher by mail. The population included 226 service engineers organized in 26 teams. In total, 200 questionnaires were returned. Of these, 157 could be used for further analysis (depending on the degree of missing values). For the customer survey a random sample was drawn, with a minimum of 75 customers per self-managed team. Mail questionnaires containing closed and open-ended questions were sent to the selected customers. The questionnaires were returned to the researcher by mail. The total sample included 2250 customers. In total, 672 usable questionnaires (response rate 29.9%) were employed. Minimally, 3 employees and 15 customers were effectively surveyed per team. The following sample profile emerges on the basis of the demographics variables. In our sample 56.2% of the employees was younger than 40 years old. With respect to education, the large majority of employees have a technical background (89.2%) and the large majority of the service engineers has extensive company experience (58.6% > 9 years), whereas most people only have few team experience (64.2% < 3 years).

Measurement issues

Except for the individual-level constructs role ambiguity and role conflict, the items employed in both surveys refer to *group*-level processes, i.e., these items are individual evaluations about the specific service quality of the service teams. Therefore, these items were aggregated and the calculation of their psychometrical characteristics was based at group level. Moreover, Schneider and Bowen (1985) argued that aggregation of data is allowed when similarity within settings – here, teams – is to be

expected. The concept of team commitment to service quality also refers to the group-level process. However, being specified as an outcome variable, it is more appropriate not to aggregate team commitment to service quality, but to model it at the individual-level, which makes it possible to explain its variance not only by team-level, but also by individual-level antecedents to take individual differences into account. Despite a certain degree of agreement, the several employees per team also show differences in their opinions about the team commitment process, which is the result of their specific role within the team and of demographic differences. Furthermore, as it was not practically possible neither realistically plausible to match employee and customer perceptions and productivity measures at the individual level, customers were matched with the specific service team they dealt with in order to test the hypothesized team-customer relationships at the group level.

Empirical justification for aggregation was tested by means of an estimate $r_{WG(J)}$, as suggested by James, Demaree, and Wolf (1993). The interpretation of this estimate is similar to that of other reliability coefficients. In our study the calculated $r_{WG(J)}$ values for the variables were above .70 for each group (except for four groups showing $r_{WG(J)}$ values between .60 and .70). The obtained $r_{WG(J)}$ values were then averaged across groups. The averaged values were above .70 for all variables except for formalization ($r_{WG(J)}$ = .69). Table 1 represents the $r_{WG(J)}$ and Cronbach ∀ coefficients of the constructs used in this study.

[PLEASE INSERT TABLE 1 ABOUT HERE]

All constructs showed coefficient ∀ 's higher than .70, except for empathy (∀ =.60). In addition, principal component analyses were conducted with respect to all constructs. The results revealed unidimensionality with acceptable factor loadings for all items (all loadings > 0. 47 (except one)). Moreover, in relation to our key construct, team commitment to service quality, confirmatory factor

analysis showed clear unidimensionality (RMSEA = 0.083, AGFI = 0.82, TLI = 0.91, CFI = 0.92) and discriminant validity in relation to relatively similar constructs 'team goal setting', 'commitment to the team', and 'job satisfaction'.

Data Analysis

Analysis Part One

By means of two-sample t-tests we empirically test whether groups with a higher level of team commitment to service quality deliver higher service quality, as perceived by customers. A median split was used to divide the 26 service teams into a higher and a lower-commitment group. Table 2 reveals that higher-level work groups obtain a significantly higher score than lower-level groups.

[INSERT TABLE 2 ABOUT HERE]

This corresponds with the significant positive correlation between team commitment to service quality and customer perceived service quality ($r. = .40$; $p. < .05$). Hence, we fail to reject hypothesis 1. In addition, we also investigated whether there would be differences for the specific SERVQUAL dimensions. Our findings indicate that higher-level work groups receive a significantly higher score on the responsiveness ($p. < .01$), empathy ($p. < .01$) and (albeit to a lesser extent) assurance ($p. < .05$) and tangibles ($p. < .05$) dimensions. Finally, we also tested whether higher-service quality commitment groups are more productive than lower-commitment groups. No significant differences were found. Therefore, hypothesis 2 is rejected.

Analysis Part Two

Our conceptual framework of the antecedents of team commitment to service quality includes variables at two levels of aggregation: the individual and the team level. Such data are designated as multilevel data

(Bryk and Raudenbush 1992). The levels are hierarchical, as employees are nested within groups. The question of how to investigate hierarchically ordered systems, such as service teams, has been a concern for quite some time. Conventional statistical techniques (e.g., ordinary regression analysis) ignore this hierarchy and may, therefore, lead to incorrect results (Bryk and Raudenbush 1992). Hierarchical linear models also called multi-level models, on the contrary, are an effective approach to deal with hierarchically nested data structures. (Hofmann 1997; Raudenbush 1993). For the conduction of the multi-level analyses the computer program MLwiN (Goldstein et al. 1998) was employed which computes (restricted) iterative generalized least squares ((R)IGLS) estimates by means of an iterative approach known as the EM algorithm (Bryk and Raudenbush 1992; Dempster, Laird, and Rubin 1977; Goldstein 1995). Two-level models were specified where level two contains 26 service teams and level one reflects 157 employees.

The following strategy for model building was used. First of all, an intercept-only model (Model A) was estimated. This is a fully unconditional model (i.e., a model without predictors at any level) which decomposes the variance of the intercept into two independent random components, namely Φ_{e0}^2 at individual level and Φ_{u0}^2 at team level. This model represents the (unexplained) variation of the outcome variable (i.e., team commitment to service quality) at each level (individual and team). The second model (Model B)[1] includes all covariates (i.e., age, organizational tenure), the employee-role antecedents at individual level and both team-context and team-employee antecedents at team level to investigate how much of the total variance in the outcome variable can be explained by these added variables. Table 3

1 In both models the intercept was specified to as a random coefficient (i.e. the coefficient was allowed to vary across teams). Therefore, a random parameter was specified at team level. In Model B the effects of the included predictor variables were constrained to be constant across teams. In theory, all effects of the coefficients could be specified as random effects. However, from a statistical viewpoint this is not recommendable, because it negatively affects model convergence and the stability of the parameter estimates (Bryk and Raudenbush 1992).

presents the results of our multilevel analyses.

[INSERT TABLE 3 ABOUT HERE]

The findings of Model A indicate substantial variance at both levels, which implies that a multilevel approach is appropriate. Furthermore, it appears that the variance at employee level is more than twice the variance at team level indicating that team commitment to service quality is mainly a function of employee characteristics. With respect to the model fit[1], the) Deviance is significant which implies that the inclusion of the specified antecedents into the model reduces unexplained variance at both levels significantly. In addition, the results of Model B show a significant positive effect of the following antecedents: empowerment, formalization, interdepartmental communication, team norms, team goal setting and role conflict on team commitment to service quality. Hence, we fail to reject hypothesis 3, 4, 6, 7, 8 and 10, respectively. Furthermore, Model B points out that the two antecedents: bureaucratic obstacles and role ambiguity have no significant impact on team commitment to service quality. Hence, we have to reject hypothesis 5 and 9. Finally, the findings of the two covariates age and organizational tenure reveal a significant strong positive impact of age as well as a significant strong negative impact of organizational tenure on team commitment to service quality. Furthermore, it can be observed that the estimated residual variances of model B with respect to model A at employee level and at team level are reduced by 10.5% and 97.3%, respectively, revealing that the added predictors explain primarily team variance.

1 The predictive power of the different models can be compared by a likelihood ratio test (Bryk and Raudenbush 1992). Deviance is computed for each model and the *difference* between the deviance statistics () Deviance) has a Π^2-distribution under H_0 that the extended model (Model B) does not predict significantly better than the reduced model (Model A). Critical values of the Π^2-statistic mean that the reduced model is too simple a description of the data (Kleinbaum, Kupper, and Muller 1988).

In conclusion, previous studies about the estimation methods for multilevel models were unable to give a clear indication whether to use the unrestricted method (IGLS) or the restricted estimation method (RIGLS) (Van der Leeden and Busing 1994; Kreft and De Leeuw 1998). Therefore, model B was estimated by both estimation procedures. The IGLS and RIGLS estimates for the specified parameters are almost identical, which confirms the 'robustness' of our model.

Discussion

The objective of this paper was to investigate antecedents and consequences of team commitment to service quality in self-managed service groups. One important consequence of this type of commitment is that service units that are dedicated to providing quality services are evaluated more favorably by customers. In other words, a collectively active involvement with service quality results in higher customer ratings. Our findings suggest that particularly customer evaluations of service team responsiveness and empathy differ between higher and lower level commitment groups. This is in line with earlier studies that have focused on the impact of service quality commitment at the level of the individual employee – customer dyad (Peccei and Rosenthal 1997). In contrast, team commitment to service quality has no impact on the service productivity measures of response time and product performance. It may very well be that the relationship between quality-oriented commitment and the service productivity may be influenced by conflicting demands for quality (by customers) and productivity (by management) as suggested by Singh (2000). Moreover, this relationship may also be mediated by the idiosyncratic product history and/or product range that each team has to service.

In addition, we also examined the impact of three types of antecedents on team commitment to service quality. A relatively strong positive relationship between empowerment and service quality

commitment was found. It appears that an organizational setting that is conducive to autonomy and initiative creates a level of involvement with the impact of service provision on the customer (Nygren and Levine 1996). This is in line with the extant view in organizational theory that service employees need a less mechanistic control system than manufacturing employees (Bowen and Lawler 1992). At the same time, however, we find that formalization also has a positive impact on team commitment to service quality. This is illustrative of the fact that in combination with a certain degree of autonomy teams also have a need for clear rules and regulations established by the organization in performing service tasks. This is also reflected by the positive effect of team norms on our key variable. Consensus among team members about how to work together and how to solve work problems promotes a common involvement with regard to offering service excellence and enhances performance, as suggested by Ephross and Vassil (1988) and Argote (1989). Furthermore, our findings revealed a significant positive impact of team goal setting on team commitment to service quality. In addition to rules and regulations imposed by the organization, team members who have first-hand knowledge of the after-sales service job will be able to develop realistic service quality goals, which enhance their efforts to meet customer demands (Yeatts and Hyten 1998). In order to both enjoy the freedom of empowerment and the frame of reference consisting of organizational rules and regulations as well as team-based norms and goals, it seems important that there is adequate interdepartmental communication, since self-managed work groups are actively responsible for obtaining and sharing information with other departments in the organization in order to determine their commitment to providing service quality.

Our findings generally underscore the incremental value of a cross-level approach to team commitment to service quality. The findings of this cross-level analysis indicate that both individual-level and team-level variables are crucial in explaining variance in team commitment to service quality of

individual team members. At the level of the individual employee we find a significant negative impact of role conflict on team commitment to service quality. As commitment to service quality may be potentially at odds with organizational efficiency, role conflict of individual employees is a barrier to a focussed involvement with providing service quality to the customer. Surprisingly, no evidence was found for a relationship between role ambiguity and the key construct. Apparently, team commitment is more related to aggregate factors than to the difficulties involving the customer-contact position of individual employees. Alternatively, since self-management enables employees to acquire the information needed to fulfill their role, the impact of role ambiguity may be less than in more traditional service positions. Finally, our empirical findings show a strong significant impact of age and organizational tenure on team commitment to service quality. Length of tenure is negatively related to team commitment to service quality. This may result from the fact that organizational veterans may be resistant to the adoption of self-management as yet another process of organizational change and innovation. On the other hand, however, when accounting for the effect of organizational tenure, age has a positive influence on a team's quality commitment. This could be attributable to the fact that among the relatively young population of service engineers, the elder ones bear the responsibility of being committed to the customer.

Theoretical Implications

Part of the strength of a research project lies in the recognition of its limitations. These limitations may serve as points for a future research agenda. To begin with, our results are based on the results of a sample of customer-contact service employees of one after-sales service department and their customers. This approach is quite likely to have contributed to the internal validity of our study, however it questions the external validity of our findings. As a result, this study needs to be replicated in other

after-sales service settings in order to generalize our findings. Another shortcoming concerns common method variance, which may have inflated the relationships estimated between the constructs that were used as antecedents to team commitment. For future research we recommend using several independent data sources. Furthermore, the cross-sectional nature of our study is certainly a limitation. The functioning of teams in organizations involves a dynamic process that changes over time. Future research should elaborate on this group dynamics by conducting longitudinal designs.

Secondly, with regards to our conceptual framework, we focused exclusively on the team commitment to service quality. It may very well be that another type of commitment, commitment to productivity, may also play an important role and that service quality and productivity are distinct aspects of service team performance. The diverging demands from customers and management underscore the importance to focus not only on quality, but also on productivity goals to create an optimal balance (Alper and Tjosvold 1998; Helfert and Vith 1999). Therefore, in further research the impact of team commitment to productivity and its relationship to team commitment to service quality is required. The use of additional productivity indicators is recommended.

Thirdly, in our study we applied one-dimensional constructs only. Especially with regards to empowerment, multidimensionality has been suggested in recent studies. Kirkman and Rosen (1999), for example, decompose empowerment into (1) potency, (2) meaningfulness, (3) autonomy, and (4) impact. Future research should, therefore, address the different aspects of the antecedent constructs.

A final limitation that warrants attention is the fact that we estimated a model in which antecedents included at individual level were different from the antecedents at aggregate level. Based on conceptual and methodological arguments, context-team and team-employee antecedents were aggregated. However, a large amount of individual variance in our model remains unexplained, which

raises the important, but still unanswered empirical question whether these antecedents should be aggregated or not to explain maximal variance in team performance. De Jonge et al. (1999) have investigated whether aggregated antecedents of employee performance data significantly add explained variance beyond the individual antecedents. They suggested that the added value of aggregated antecedents depends on whether the outcome variable is a typical individual perception or a more situation-based construct. Therefore, more research is needed to examine models that specify antecedents of service team outcomes at the individual and team levels simultaneously (cf. Kirkman and Rosen 1999; Tesluk, Brass, and Mathieu 1996).

Managerial Implications

Our findings also suggest a number of managerial implications. First and foremost, it has been demonstrated that team commitment to service quality has an impact on customer evaluations of service quality. From a managerial standpoint it seems worthwhile to promote this type of commitment in service teams. Our study suggests a number of points to focus on. In the first place, it seems important to pay attention to employee empowerment. The body of literature on this topic suggests that employees who experience their tasks as more meaningful, who believe that they have the competency to participate effectively, or have the impression that suggestions are taken seriously by management will be more committed to providing the customer with excellent service (Thomas and Velthouse 1990).

We also found that interdepartmental communication is critical. The willingness of team workers to improve service aspects depends largely on effective informational exchanges with upper management and other work units (Peccei and Rosenthal 1997). Therefore, attention needs to be paid to providing a communication infrastructure that is conducive to the seamless sharing of information, using mediated

(e.g., e-mail and intranet) as well as face-to-face communication opportunities.

Another critical point concerns the extent to which self-managed service groups set their own goals. By setting clear goals at team level group members receive the required feedback and are encouraged to achieve these specific objectives as a team. Therefore, managers should encourage as well as coach service teams in reaching consensus on service quality objectives. Moreover, norms are the informal rules that guide team members' behavior. The existence of service quality-oriented norms implies high agreement among team members and enhances the involvement with the team working procedures. To strengthen team norms periodical meetings could be organized during which team employees can discuss for example, the effectiveness of working procedures (Wageman 1997). Also, the positive effect of formalization is illustrative of the fact that clear rules and regulations are needed to stimulate service quality commitment. Particularly in the implementation of self-management employees need a frame of reference that may reduce uncertainty. Therefore, it seems important to review policies and guidelines regarding self-management of the service organization. Finally, the strong impact of demographic factors suggests that careful attention should be paid to the composition of self-managed service teams. In conclusion, both individual and aggregate factors should be taken into account in promoting the important construct of team commitment to service quality.

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Appendix I

TABLE A 1

Sample Items

Scale	*Total no. of items*	*Sample items*
SERVQUAL	8	• Time needed to for the service engineer to arrive. • Understanding for the problem by the service engineer.
Team Commitment to Service Quality	7	• Our team is always working to improve the quality of service provided to customers. • Our team has specific ideas about how to improve the service we provide to customers.
Empowerment	7	• Our team is allowed a high degree of initiative.
Formalization	2	• Clear and planned goals and objectives are set for service team performance by upper management.
Bureaucratic Obstacles	3	• Suggestions for service improvement proposed by my team take a long time.
Interdepartmental Communication	8	• The information exchange with the Sales department about customers is good.
Team Norms	5	• Within our team, standards are developed to judge our performance by.
Team Goal Setting	4	• We set our own goals for group performance.
Role Ambiguity	6	• I know exactly what is expected of me.
Role Conflict	8	• I receive incompatible requests from two or more people.

Tables

TABLE 1

Reliability of Measures

	Construct	Number of Items	($r_{WG(J)}$) coefficient	Cronbach ' [a]
Customer Survey	SERVQUAL	8	.97	*.91*
	Responsiveness	2	.84	*.85*
	Reliability	2	.84	*.72*
	Assurance	1		
	Empathy	2	.78	*.60*
	Tangibles	1		
Employee Survey	Team Commit.[b]	7	.93	.85 (*.84*)
	Empowerment	7	.95	*.91*
	Formalization	2	.69	*.70*
	Bureaucratic Obst.[b]	3	.77	*.85*
	Interdepartmental Com.[b]	8	.79	*.85*
	Team Norms	5	.87	*.79*
	Team Goal Setting	8	.93	*.85*
	Role Ambiguity	6		.87
	Role Conflict	8		.85

[a] Calculation of italicized coefficients is based on team-level data.

[b] Team Commit. = Team Commitment to Service Quality; Interdepartmental Com. = Interdepartmental Communication; Bureaucratic Obst. = Bureaucratic Obstacles.

TABLE 2

The Effect of Team Commitment to Service Quality-Level on Service Quality.

Service Quality Factors	Team Commitment-level	Mean (s.d)	t-value
Customer Perceiver Service Quality			
SERVQUAL	Lower-level groups	47.20 (1.66)	
	Higher-level groups	49.42 (1.93)	-3.12**
Responsiveness	Lower-level groups	11.15 (.56)	
	Higher-level groups	11.87 (.55)	-3.29**
Reliability	Lower-level groups	11.57 (.44)	
	Higher-level groups	11.93 (.54)	-1.82
Assurance	Lower-level groups	6.30 (.28)	
	Higher-level groups	6.60 (.28)	-2.74*
Empathy	Lower-level groups	11.79 (.52)	
	Higher-level groups	12.40 (.56)	-2.89**
Tangibles	Lower-level groups	6.38 (.21)	
	Higher-level groups	6.62 (.28)	- 2.45*
Service productivity			
Response Time in Hours	Lower-level groups	7.75 (.98)	
	Higher-level groups	7.82 (2.14)	-.10
Product Performance [b]	Lower-level groups	97.00 (1.28)	
	Higher-level groups	97.79 (.74)	-1.89

*N = 26;*p < .05; **p < .01*

[a] Team Commitment-level = Level of Team Commitment to Service Quality in Service Groups (Higher-level vs. Lower-level Groups).

[b] Percentage of time that office product was operational.

TABLE 3

Results of the Multi-level Analyses

	Model A (IGLS)	Model B (IGLS)	Model B (RIGLS)
		Fixed part [a]:	
Intercept (γ_{00})	36.53	7.86	8.16
Individual-level coefficients [b]*:*			
Age (γ_{10})		2.11 (.75)**	2.12 (.77)**
Organizational Tenure (γ_{20})		-1.55 (.43)**	-1.55 (.44)**
Role Ambiguity (γ_{30})		-.08 (.10)	-.08 (.10)
Role Conflict (γ_{40})		-.12 (.06)*	-.12 (.06)*
Team-level coefficients [a]*:*			
Team Norms (γ_{01})		.40 (.16)*	.40 (.16)*
Team Goal Setting (γ_{02})		.47 (.19)*	.45 (.20)*
Empowerment (γ_{03})		.44 (.16)**	.43 (.16)**
Formalization (γ_{04})		.54 (.25)*	.56 (.27)*
Bureaucratic Obstacles (γ_{05})		.32 (.17)	.31 (.19)
Interdepartmental Com. (γ_{06})		.23 (.07)**	.23 (.08)**
		Random part [b]:	
σ_{e0}^2 (individual-level var.)	26.83 (3.81)	24.02 (3.14)	24.80 (3.31)
σ_{u0}^2 (team-level var.)	9.94 (4.26)	.27 (1.63)	1.45 (2.05)
		Model fit:	
Deviance	999.7	946.3	946.9
) Deviance (df)		53.4** (10)	-
Intra-class correlation	.27	.01	.06

*$p < .05$; **$p < .01$. Significance level of the (coefficients can be tested by the ratio [$\hat{\gamma} / S.E.(\hat{\gamma})$], which is a t-value.

Based on two-tailed t-tests: t-values > 1.96, $p < .05$; t-values > 2.33, $p < .01$ (Snijder and Bosker, 1999).

[a] Standard errors between parentheses.

[b]Regression coefficients are unstandardized. To compare them in strength one can calculate *standardized coefficients.*

They are given by $\frac{S.D.(X)}{S.D.(Y)}\gamma$.

Figures

FIGURE 1

Relationships in the Conceptual Framework